

We claim:

Sub 17  
1. An automated recommendation system, comprising:  
2 a processor connected to receive resource data defining  
3 available resources and at least two sets of profile data,  
4 each defining user preferences with respect to said  
5 resources;

6 each of said sets of profile data being derived from a  
7 different class of interaction of said user with a first  
8 portion of said resource data and usable to predict a given  
9 resource's desirability based on said each of said sets;

10 said processor being adapted to generate a weighted sum  
11 of corresponding records from each of said sets to generate  
12 a single combined set of profile data.

1 2. A system as in claim 1, wherein said processor is  
2 further adapted to generate predictions from said single  
3 combined set.

1 3. A system as in claim 2, wherein said processor is  
2 connected to control a delivery of resources corresponding  
3 to said resource data and responsively to said predictions.

1 4. A system as in claim 1, wherein said processor is  
2 connected to control a delivery of resources corresponding  
3 to said resource data and responsively to said predictions.

1 5. A system as in claim 1, wherein said at least two  
2 profile data sets include a feedback data set derived from  
3 ratings provided by said user with respect to a particular  
4 resource in said resource data.

1 6. A system as in claim 1, wherein said at least two  
2 profile data sets include an implicit data set derived from  
3 machine-observation of a user's resource use history,  
4 whereby said implicit data reflects said user's selections  
5 of resources to use.

1 7. A system as in claim 1, wherein said input vectors  
2 each include feature-value pairs.

1 8. A system as in claim 1, wherein said input vectors  
2 include feature-value pairs and a rating value.

1 9. A method of recommending resources, comprising the  
2 steps of:

3 generating at least two sets of profile data based on  
4 expressed preferences of a user with respect to said  
5 resources each being usable to predict a given resource's  
6 desirability based on said each of said sets;

7 generating a weighted sum of corresponding records from  
8 each of said sets to generate a single combined set of  
9 profile data.

1 10. A method as in claim 9, further comprising the  
2 step of generating predictions from said single combined  
3 set.

1 11. A method as in claim 10, further comprising the  
2 step of controlling a delivery of resources corresponding to  
3 said resource data responsively to said predictions.

1 12. A method as in claim 9, further comprising the  
2 step of controlling a delivery of resources corresponding to  
3 said resource data responsively to said predictions.

1 13. A method as in claim 9, wherein said step of  
2 generating includes generating a feedback data set by  
3 accepting ratings from a user with respect to a particular  
4 resource in said resource data.

1 14. A method as in claim 9, wherein said step of  
2 generating includes generating an implicit data set by  
3 observing a user's resource use history, whereby said  
4 implicit data reflects said user's selections of resources  
5 to use.

1 15. A method as in claim 9, wherein said input vectors  
2 each include feature-value pairs.

1 16. A method as in claim 9, wherein said step of  
2 generating includes generating feature-value pairs and a  
3 rating value.

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6 said sets of profile data including a set of explicit  
7 profile data indicating express indications by a user of  
8 preferred classes of programming rather than indications by  
9 said user of particular resources that are preferred;

10 said sets of profile data further including feedback  
11 data set derived from ratings provided by said user with  
12 respect to a particular resource in said resource data; and

13 said sets of profile data further including an implicit  
14 data set derived from machine-observation of a user's  
15 resource use history, whereby said implicit data reflects  
16 said user's selection;

17 generating at least two sets of predictions based on  
18 one or a combination of said sets of profile data, each of  
19 said predictions including a confidence level;

20 combining said predictions by weight-averaging  
21 corresponding ones from each of said at least two sets to  
22 produce a combined set.

1 22. A method in claim 21, wherein said step of  
2 combining includes adjusting weights of said weight  
3 averaging responsively to a difference between said  
4 corresponding ones.

1 23. A method as in claim 21, wherein said step of  
2 combining includes selectively overriding said weight  
3 averaging responsively to a difference between said

4 corresponding ones such that a prediction of a one of said  
5 sets of predictions is included in said combined set and a  
6 prediction of the other of said sets of predictions is  
7 excluded.

1        24. A method of combining profile data, comprising the  
2 steps of:

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3      generating first profile data by receiving through a
4      user interface user preferences in the form of expressed
5      generalized preferences corresponding classes of resources;

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6       generating second profile data by receiving user  
7 preferences in the form of rating data corresponding to  
8 specific resources;

9 combining said first and second profile data to produce  
10 predictions by one of:

11           applying said first and second profile data to  
12   respective prediction engines and combining respective  
13   results thereof; and

14 directly combining said first and second profile  
15 data to a prediction engine.

1           25. A method as in claim 24, wherein said step of  
2 directly combining includes weight averaging corresponding  
3 ones of said profile data.

1 26. A method as in claim 24, wherein said step of  
2 combining respective results includes selectively weight  
3 averaging corresponding ones of said predictions

1 27. A method of modifying a preference profile for  
2 making resource-choice recommendations, comprising the steps  
3 of:

4 forming a profile based on expressed preferences of a  
5 user;

6 presenting at least one resource from a database of  
7 available resources;

8 generating at least one suitability prediction  
9 responsively to said profile and said at least one resource;

10 selectively accepting data from said user to modify  
11 said profile responsively to said step of generating.

1 28. A method as in claim 27, wherein said profile is a  
2 database of explicitly-specified rules indicating  
3 preferences of said user.

1 29. A method as in claim 27, wherein said step of  
2 selectively accepting includes displaying data from said  
3 profile on which said suitability prediction is based.

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